

Appl. No. : 10/674,736
Filed : September 30, 2003

REMARKS

Claims 1-39 were pending in this application. With this response, Claims 1-39 remain pending for consideration. Claims 1 and 24 have been amended. Applicant thanks the Examiner for the indication of allowable subject matter in Claims 28-39.

Rejection of Claims 1-8, 10, 14, 18, and 24-26 Under 35 U.S.C. § 102(e)

The Examiner rejected Claims 1-8, 10, 14, 18, and 24-26 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,511,512 (the '512 patent) issued to Phillips et al. Applicant respectfully traverses this rejection for the following reasons.

To anticipate a claim, a prior art reference must identically teach every element of the claim. See M.P.E.P. § 2131. Thus, to sustain the foregoing rejections of Claims 1-8, 10, 14, 18, and 24-26, the '512 patent must identically teach every element of Claims 1-8, 10, 14, 18, and 24-26.

Claims 1-7

Applicant's specification describes several non-limiting embodiments that patentably distinguish over the '512 patent. In one embodiment, exemplified by Claim 1 as amended, an impact and torque-absorbing prosthetic shock module includes, *inter alia*, an inner support member and an outer support member coaxially supported relative to one another and capable of relative rotation and axial translation. A resilient element resists axial displacement of the support members, and a torque resisting cuff provides torsional resistance to relative rotational motion between the support members. An adapter is provided configured to proximally attach the shock module to a stump-supporting socket or intermediate device, the adapter being secured to one of the inner support member and outer support member but remaining unsecured relative to the resilient element, wherein the adapter can be at least partly removed to allow replacement of the resilient element.

The '512 patent at column 10, lines 13-17, describes with respect to Figure 1 that the coil 30 is bonded to the top spring end fitting 38. This spring end fitting 38 is in turn secured to the bottom of pyramid fitting 36. Col. 9, line 67 to col. 10, line 3. Thus, Applicant's Claim 1 is patentably distinct over the '512 patent at least because the '512 patent does not disclose an adapter, secured to an inner or outer support member but unsecured relative to a resilient element, designed to be removable to allow replacement of the resilient element. Applicant's

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specification describes the advantages of having an easily removable adapter, stating that the replacement of the resilient element can provide "a convenient means to selectively adjust the degree of impact absorption to suit the particular attributes (e.g., weight) and activity (e.g., walking, running, jumping, etc.) of the amputee." (Application ¶ 4.)

Thus, Applicant respectfully submits that Claim 1 recites a unique combination of features not taught or suggested by the cited art. Applicant further submits that dependent Claims 2-7 each also recites a unique combination of features not taught or suggested by the cited art. Applicant notes in particular that Phillips '512 does not teach an adapter attached with a pinch bolt as described in Applicant's specification, or an adapter hingedly attached to the shock module. Accordingly, Applicant respectfully requests that the rejection of these claims over the '512 patent be withdrawn.

Claims 8, 10, 14, and 18

In an embodiment, exemplified by Claim 8, an impact and torque-absorbing prosthetic shock module includes, *inter alia*, an inner support member and an outer support member coaxially supported relative to one another and capable of relative rotation and axial translation. A precompressed resilient element resists axial displacement of the support members, and a torque resisting cuff provides torsional resistance to relative rotational motion between the support members. An adapter is provided for proximally attaching the shock module to a stump-supporting socket or intermediate device.

This embodiment is patentably distinct over the '512 patent at least because the '512 patent does not disclose the use of a precompressed resilient element to resist axial displacement of the support members. By contrast, Phillips teaches at column 11, line 57 that "the coil spring 30 is preferably free of pre-loading stress." Column 12, lines 12-13 of Phillips further explain disadvantages of using a pre-loaded spring. In the present application Applicant has recognized that precompression of the resilient element in certain embodiments can aid in adjusting the compression and stiffness of the shock module. (Application ¶ 27.)

Thus, Applicant respectfully submits that Claim 8 recites a unique combination of features not taught or suggested by the cited art. Applicant further submits that dependent Claims 10, 14, and 18 each also recites a unique combination of features not taught or suggested by the cited art. Accordingly, Applicant respectfully requests that the rejection of these claims over the '512 patent be withdrawn.

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Claims 24-26

In an embodiment, exemplified by Claim 24, a shock module includes, inter alia, an upper support member and a lower support member coaxially supported relative to one another and capable of relative rotation and axial translation. A torque resisting cuff provides torsional resistance to relative rotational motion between the support members and is attached to the lower support member about half-way or more below its upper end. A resilient element resists axial displacement of the support members. An upper end of the lower support member extends into the space surrounded by the torque resisting cuff.

This embodiment is patentably distinct over the '512 patent at least because the '512 patent does not disclose a shock module wherein the torque resisting cuff is attached to the lower support member about half-way or more below its upper end, allowing the upper end of the lower support member to extend into the space surrounded by the torque resisting cuff. This design feature enables the shock module of this particular embodiment of Applicant's specification to remain compact, making the shock module advantageous for patients with long residual limbs.

Thus, Applicant respectfully submits that Claim 24 recites a unique combination of features not taught or suggested by the cited art. Applicant further submits that dependent Claims 25-26 each also recites a unique combination of features not taught or suggested by the cited art. Accordingly, Applicant respectfully requests that the rejection of these claims over the '512 patent be withdrawn.

Rejection of Claims 9, 17, and 27 Under 35 U.S.C. § 103(a)

The Examiner rejected Claims 9, 17, and 27 as being obvious over the '512 patent. Claims 9 and 17 depend from Claim 8 and are believed to be patentable for the same reasons discussed above with regard to Claim 8. Claim 27 depends from Claim 24 and is believed to be patentable for the reasons discussed above with regard to Claim 24. Furthermore, the additional features of each of the embodiments described in Claims 9, 17, and 27 do provide particular advantages and/or are used for a particular purpose.

With regard to Claims 9 and 27 the relative lengths or positions of the torque resisting cuff and the support members can help to reduce the overall height of the shock module. As explained in paragraph 28 of the application, "[t]o accommodate the axial length of an appropriately sized cuff 4 while keeping the module 11 compact, the cuff 4 is preferably attached

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to the inner support member at an intermediate location between its proximal and distal ends and is attached to the outer support member 2 at an intermediate location between its proximal and distal ends 25. In one embodiment, the axial length of the torque resisting cuff h_4 is greater than about half the axial length of the inner support member h_9 ."

With regard to Claim 17, the o-ring placed under the distal end of the inner support member "keeps base plug 9 in place and maintains enough space for the inner support member 1 to slide between the inside surface of the outer support member 2 and the base plug 9." (Application ¶ 27.)

Rejection of Claims 11-13, 15, 16, and 19-23 Under 35 U.S.C. § 103(a)

The Examiner rejected Claims 11-13, 15, 16, and 19-23 as being obvious over the '512 patent. The Examiner asserts that it would have been obvious to modify the shock module of the '512 patent to have the height ranges of Claims 11-13, 15, 16, and 19-23.

Claims 11-13, 15, and 16

Claims 11-13, 15, and 16 depend from Claim 8. Thus, Claims 11-13, 15, and 16 are believed to be patentable for the same reasons discussed above with regard to Claim 8, and because each of these claims recites a unique combination of features not taught or suggested by the cited art. Applicant respectfully directs the Examiner's attention to the further discussion with respect to Claim 19 below.

Claims 19-23

In one embodiment exemplified by Claim 19, an impact and torque absorbing lower limb prosthesis comprises inter alia an upper support member and a lower support member coaxially supported relative to one another and capable of relative rotation and axial translation. A resilient element resists axial displacement of the support members, and a torque resisting cuff provides torsional resistance to relative rotational motion between the support members. An adapter is operably connected to the upper support member for attaching the prosthesis to a stump-supporting socket or intermediate device. A prosthetic foot member having a ground contacting portion is operably connected to the lower support member. The vertical height from the ground contacting portion of the foot to the top of the adapter is about 160 mm or less.

The '512 patent does not disclose a prosthesis with a shock module designed to have a vertical height of 160 mm or less. Moreover, Applicant respectfully disagrees with the

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characterization of this limitation, as well as the limitations of Claims 11-13, 15, 16, and 20-23 as being simply "optimum or workable" ranges. Applicant submits that a rejection based on "optimum or workable ranges" is inappropriate where the prior art does not teach or suggest the desirability of the result achieved. As discussed in MPEP § 2144.05, "[a] particular parameter must first be recognized as a result-effective variable, i.e., a variable which achieves a recognized result, before the determination of the optimum or workable ranges of said variable might be characterized as routine experimentation." In re Antonie, 559 F.2d 618, 195 U.S.P.Q. 6 (CCPA 1977). Thus, for a rejection to be made based on "optimum or workable ranges," the prior art must first identify the result which the variable achieves.

The optimum height for the prosthesis depends on the needs of the particular patient. Thus, Applicant's shock module is not simply an optimized version of the shock module of the '512 patent. Rather it is a different device designed for different needs.

Particular dimensions disclosed in Applicant's specification are directed to reducing the overall height of the shock module and/or prosthetic device. Applicant respectfully submits that nowhere does the '512 patent identify the desired result of making a low profile device, particularly for amputees with long residual limbs. Accordingly, without disclosing the desirability of making a low profile device, the '512 patent cannot be used to reject claims on the basis that the parameters affecting this result are merely "optimum or workable" ranges that would be known to one of skill in the art.

Thus, Applicant respectfully submits that Claim 19 recites a unique combination of features not taught or suggested by the cited art. Applicant further submits that dependent Claims 20-23 each also recites a unique combination of features not taught or suggested by the cited art. Accordingly, Applicant respectfully requests that the rejection of these claims over the '512 patent be withdrawn.

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CONCLUSION

Applicant has endeavored to address all of the Examiner's concerns as expressed in the outstanding Office Action. In light of these amendments and remarks, reconsideration and withdrawal of the outstanding rejections is respectfully requested. The Examiner is invited to call the undersigned attorney of record with any questions or issues that may be resolved by Examiner's amendment.

Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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Dated: 12-7-04

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AMEND
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